



# Multiplication – Solving Problems

## 2.4.5

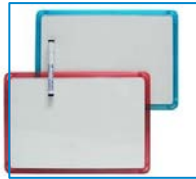
**Word Wall:** word problems, puzzles, altogether, multiplication, repeated addition, arrays, problem solving

### Introduction

Students will use their knowledge of multiplication to solve static and active problems.

### Resources

- ✓✓ Mini Whiteboard
- Whiteboard pens



### Time / Classroom Organisation

This activity may be introduced in a whole group or small group as a 20 – 30 minute focused teaching and learning event.

### Australian Curriculum

Year level: Two

Recognise and represent multiplication as repeated addition, groups and arrays (ACMNA031)

Proficiency Strand:

Understanding – connecting number calculations with counting sequences

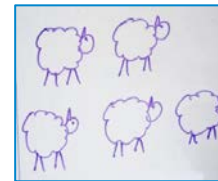
Reasoning – using known facts to derive strategies for unfamiliar calculations



### Activity Process – Picture Puzzles (Static)

1. Provide a group of students with a mini whiteboard and whiteboard pen.
2. Ask students to draw the following picture on their whiteboards.

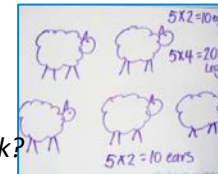
*There are 5 sheep in a paddock.*



3. Ask students the following questions and encourage them to use their multiplication knowledge to solve the questions.

*How many eyes are there in the paddock? How ears are there in the paddock?*

*How many legs are there in the paddock?*



4. Repeat with other picture puzzles stories.  
*There are 5 birds sitting on a fence.*

- *How many legs are there on the fence?*
- *How many beaks are there on the fence?*
- *How many eyes are there on the fence?*

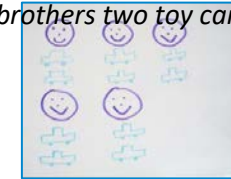
*There are 2 cars on the race track.*

- *How many wheels are there on the race track?*
- *How many steering wheels are there on the race track?*
- *How many seats are there in the cars that are on the race track?*

### Activity Process – Picture Puzzles (Active)

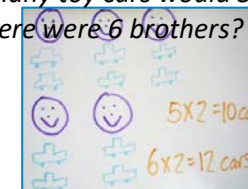
1. Provide a group of students with a mini whiteboard and whiteboard pen.
2. Ask students to draw the following picture on their whiteboards.

*Santa gave 5 brothers two toy cars each.*



3. Ask students the following questions and encourage them to use their multiplication knowledge to solve the questions.

*How many toy cars did Santa have in his sack? How many toy cars would Santa have in his sack if there were 6 brothers?*



4. Repeat with other picture puzzles stories.  
*The teacher handed 6 students 4 balloons each.*
- *How many balloons did the teacher hand out?*
- *How many did the teacher start with if she had 3 left over?*

*When shopping a group of 3 friends bought two lollypops and one soft drink each.*

- *How many lollypops did they buy altogether?*
- *How many soft drinks did they buy altogether?*



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## Variations & Extensions

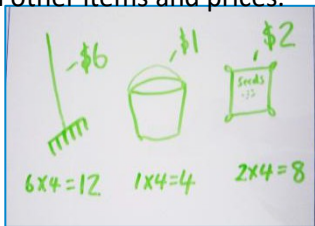
### 1. Think Board – Picture puzzles with Money

Resources: Mini White boards, white board pens. Ask the students to draw the following items and the price on their whiteboards.

- Garden Rake - \$6
- Bucket - \$1
- Packet of seeds - \$2

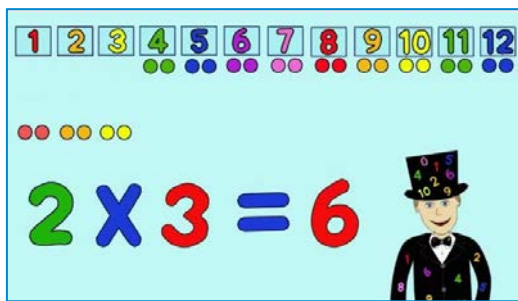
Ask students to find the total cost of 4 rakes, 4 buckets and 4 packets of seed.

Repeat with other items and prices.



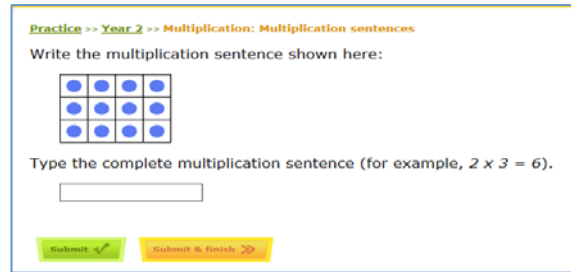
### 2. A math's song with Mr Numbers to teach children the 2 times table

<http://www.youtube.com/watch?v=850t1vjTZGg>

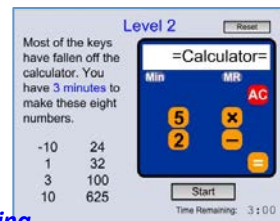


## Digital Resources

<http://au.ixl.com/math/year-2/multiplication-sentences>



[http://www.mathplayground.com/calculator\\_chaos.html](http://www.mathplayground.com/calculator_chaos.html)



## Contexts for Learning

### Play:

Use the function machine to solve multiplication facts. Students input the multiplication flash card into the machine and the function machine operator computes the fact and outputs the answer.

### Investigation:

Ask students:  $2 \times \quad =$  Tell me how to make this true.

### Real life experience:

When handing equipment out in class use multiplication facts to work out the quantity needed.

### Routines and Transitions:

As students transition hold up the x2 Multiplication [Flash Cards](#) for students to solve.

## Assessment

Ask students to draw a picture puzzle for you and answer questions regarding the picture by use of multiplication facts.

**Achievement Standard:** represent multiplication and division by grouping into sets.

## Background Reading

Linking the two ideas of repeating equal quantities and partitioning a quantity into equal portions can help students to understand the connection between multiplication and division. Therefore, it is an important component of their being able to use multiplication and division flexibly to solve problems.

Source: *First steps in Mathematics – Number – Understand Operations*, 2010. Rigby: Port Melbourne. p 56

Multiplication is usually presented in static situations. There is no action. We need to think of ways to make multiplication active so it can be easily linked to division.

Source: Source: Calvin Irons, 2011. *Multiplication and Division Strategies that help ensure success*. Origo Education

## Year three NAPLAN --- Numeracy test links

[Multiplication and division – number problems](#)

[Multiplication and division – word problems](#)

## Links to Related MAGs

2.2.6 - Multiplication – repeated addition

2.3.4 – Multiplication – doubling

2.3.5 – Multiplication – arrays

3.2.4 – Multiplication Facts (1)

3.3.1 – Multiplication Facts (2)

3.3.4 – Solving Problems – Multiplication and Division